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Richard Catlin & Associates, Inc.

ENVIRONMENTAL ENGINEERS AND HYDROGEOLOGISTS

March 7, 1994

Koch Refining Company
Attn: Mr. Jim Strickland
P.O. Box 3958
Wilmington, North Carolina 28406

Re: Koch Refining Oil Terminal North
Wilmington, North Carolina
RC&A Project No. 8646-I

Dear Jim:

Attached is the quarterly monitoring report concerning the recovery systems at the Koch Refining Company North Terminal in Wilmington, North Carolina. In reviewing the attached Figure, note the effects of ground water withdrawal from around the recovery wells RW-4 and RW-5. When the monitoring wells were gauged, the RW-3 control probe floats were stuck keeping the recovery pump turned off. On February 17, 1994, Mr. Michael E. Mason and myself checked the calibration of the treatment system sonic discharge flow meter. The instrument checked out fine. Upon your review and approval, please forward the enclosed additional copies to:

North Carolina Division of Environment Management
Attn: Charles Stehman
127 Cardinal Drive Extension
Wilmington, North Carolina 28403-3696

If you should have any questions or requests, please contact our office at your earliest convenience.

Sincerely,

Stephan A. Tyler, Manager
Monitoring Operations

GROUND WATER MONITORING REPORT

MONITORING PERIOD: 10/18/93 - 2/14/94

CLIENT: Koch Refining Company
SITE: Koch North Fuel Oil Terminal
LOCATION: Wilmington, North Carolina

RC&A PROJECT NO.: 8646-I
DATE OF LAST REPORT: 7/14/93 - 10/18/93

MONITORING REQUIREMENTS:

Semi Monthly: Check site's recovery operations, monitor free product accumulation and recovery.

Quarterly: Measure all monitoring and monitoring/recovery wells.

SITE VISIT THIS MONITORING PERIOD:

Date	Comments
10/18/93 - 2/14/94	Recovery wells RW-4 and RW-5 have been operating fine during this past quarter. In January of 1994, the RW-3 discharge line was leaking inside the recovery well. Since the line was replaced by the end of January, the recovery system has been operating properly. The treatment system has been operating as planned.

SYSTEM STATUS

MONITORING PERIOD: 10/18/93 - 2/14/94

A) **MONITORING SYSTEM:** Forty-two monitoring wells (2" monitoring wells).

B) **VOLUME OF FREE PRODUCT RECOVERED THIS PERIOD:** 0 Gallons
GRAVITY SEPARATOR(S): 0 Gallons
RECOVERED PRODUCT STORAGE TANKS: 1,259 Gallons
CUMULATIVE TOTAL RECOVERED TO DATE: 8,663 Gallons
CUMULATIVE TOTAL REMOVED FROM SITE: 7,234 Gallons
PRODUCT RECOVERY SYSTEM: Three 2' diameter recovery wells (RW-3, RW-4 and RW-5); one storm drain sump (SD-1)

C) **VOLUME OF TREATED GROUND WATER THIS PERIOD:** No Data
CUMULATIVE TOTAL TREATED TO DATE: No Data
FLOW: No Data
TREATMENT SYSTEM: All recovery well discharge into an aeration treatment plant which handles storm water run-off as well.

SAMPLING: Treatment system effluent has reported tested compliant per the discharge limitations in NPDES Permit No. NC0076732.

D) **GROUND WATER QUALITY:** No representative ground water samples from the monitoring wells were required during this past monitoring period.

E) FIELD DATA - DATA REDUCTION OF WATER TABLE MEASUREMENTS TAKEN ON 2/14/94 (in feet) (Refer to attached figures):

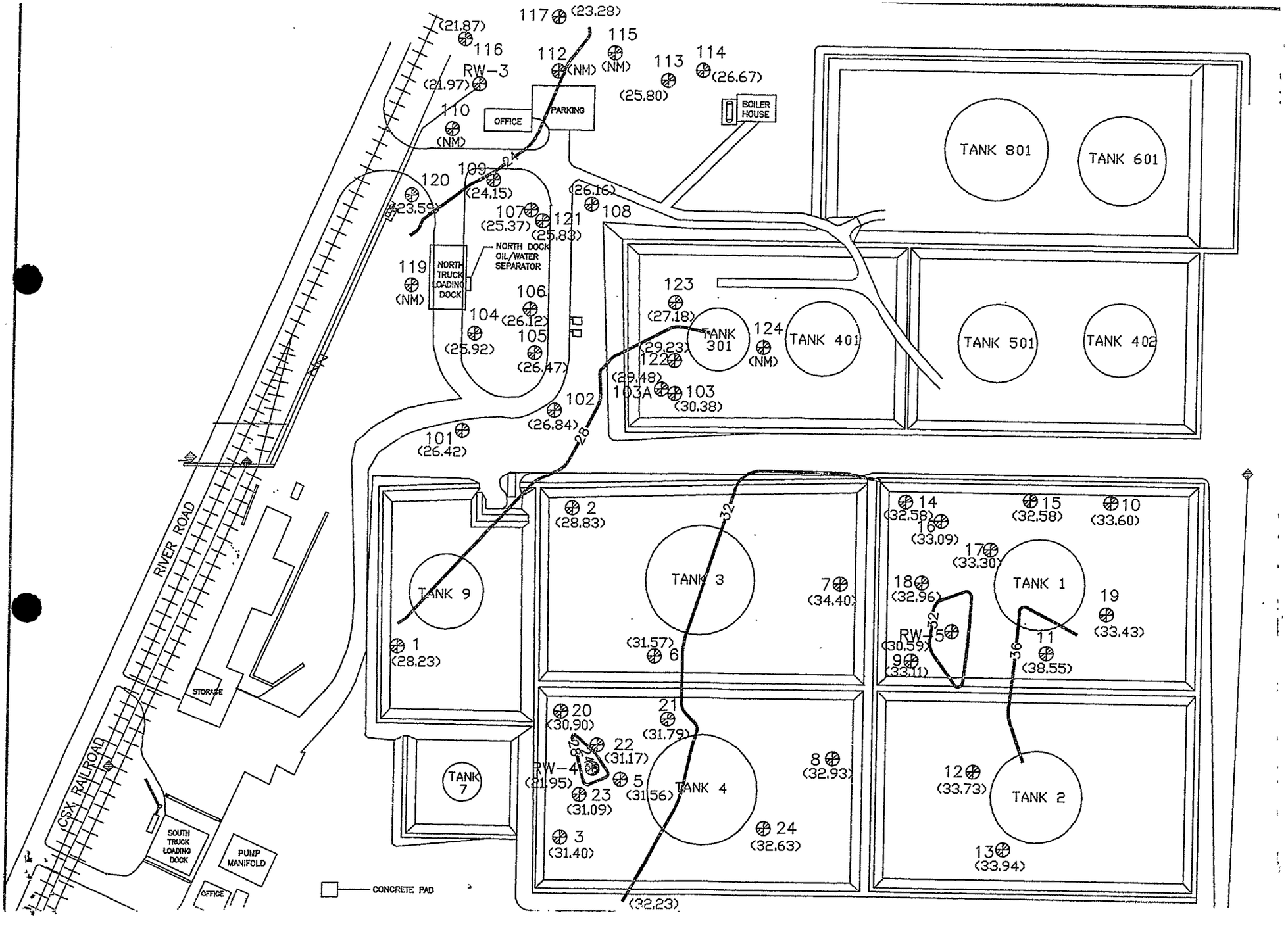
Well No.	*Top of Casing*	*Water Table Depth*	*Product Thickness*	*Specific Gravity Adjustment*	*Water Table Elevation*
Northern End					
101	28.88	2.46	0.00	-	26.42
102	29.88	3.04	0.00	-	26.84
103	38.90	8.52	0.00	-	30.38
103A	38.50	9.02	0.00	-	29.48
104	28.21	2.29	0.00	-	25.92
105	29.61	3.14	0.00	-	26.47
106	28.75	2.63	0.00	-	26.12
107	29.32	3.95	0.00	-	25.37
108	30.89	4.73	0.00	-	26.16
109	30.04	5.89	0.00	-	24.15
113	33.28	7.48	0.00	-	25.80
114	34.80	8.13	0.00	-	26.67
116	28.90	7.03	0.00	-	21.87
117	31.33	8.05	0.00	-	23.28
120	27.64	4.05	0.00	-	23.59
121	29.30	3.47	0.00	-	25.83
122	36.52	7.29	0.00	-	29.23
123	35.29	8.11	0.00	-	27.18

Table cont'd					
Well No.	*Top of Casing*	*Water Table Depth*	*Product Thickness*	*Specific Gravity Adjustment*	*Water Table Elevation*
Recovery Locations					
RW-3	29.07	7.10	0.00	-	21.97
RW-4	39.43	17.48	0.00	-	21.95
RW-5	44.72	14.13	0.00	-	30.95
SD-1	-	-	0.00	-	-
Tank No. 1					
7	43.41	9.01	0.00	-	34.40
9	44.70	11.59	0.00	-	33.11
10	46.85	13.25	0.00	-	33.60
11	44.79	6.24	0.00	-	38.55
12	46.21	12.48	0.00	-	33.73
13	45.79	11.85	0.00	-	33.94
14	45.66	13.08	0.00	-	32.58
15	46.83	13.45	0.00	-	33.38
16	46029	13.20	0.00	-	33.09
17	45.32	12.02	0.00	-	33.30
18	44.57	11.61	0.00	-	32.96
19	47.31	13.88	0.00	-	33.43

Table cont'd					
Well No.	*Top of Casing*	*Water Table Depth*	*Product Thickness*	*Specific Gravity Adjustment*	*Water Table Elevation*
Tank No. 4					
1	37.28	9.05	0.00	-	28.23
2	40.86	12.03	0.00	-	28.83
3	39.61	8.21	0.00	-	31.40
4	40.48	8.25	0.00	-	32.23
5	40.12	8.56	0.00	-	31.56
6	41.53	9.96	0.00	-	31.57
8	40.75	7.82	0.00	-	32.93
20	41.16	10.26	0.00	-	30.90
21	42.25	10.49	0.00	-	31.79
22	41.23	10.06	0.00	-	31.17
23	40.41	9.32	0.00	-	31.09
24	40.90	8.27	0.00	-	32.63

Stephan A. Tyler, Manager, Monitoring Operations

Michael E. Mason, P.E.


117 (23.28)
(21.87)
116
RW-3
(21.97)
112 (NM)
115 (NM)
113 (25.80)
114 (26.67)
110 (NM)
OFFICE
PARKING
BOILER HOUSE
TANK 801
TANK 601
120 (23.59)
109 (24.15)
107 (25.37)
121 (25.83)
(26.16)
108
NORTH DOCK OIL/WATER SEPARATOR
NORTH TRUCK LOADING DOCK
119 (NM)
106 (26.12)
104 (25.92)
105 (26.47)
123 (27.18)
TANK 301
124 (NM)
TANK 401
TANK 501
TANK 402
(29.23)
122 (29.48)
103A
103 (30.38)
102 (26.84)
101 (26.42)
RIVER ROAD
CSX RAILROAD
STORAGE
SOUTH TRUCK LOADING DOCK
PUMP MANIFOLD
OFFICE
CONCRETE PAD
TANK 9
2 (28.83)
TANK 3
7 (34.40)
1 (28.23)
(31.57)
6
14 (32.58)
15 (32.58)
10 (33.60)
16 (33.09)
17 (33.30)
18 (32.96)
TANK 1
19 (33.43)
RW-5 (30.59)
9 (33.11)
11 (38.55)
20 (30.90)
21 (31.79)
22 (31.17)
RW-4 (21.95)
5 (31.56)
23 (31.09)
TANK 4
8 (32.93)
TANK 7
3 (31.40)
24 (32.63)
12 (33.73)
TANK 2
13 (33.94)
(32.23)